

**Notice of Allowability**

Application No.

10/730,118

Applicant(s)

KUIPER, PAUL

Examiner

Charlotte M. Baker

Art Unit

2625

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application filed on 12/09/2003.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

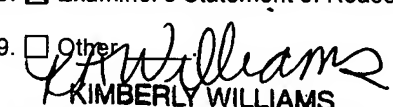
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 12/09/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
  6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
  7. ☐ Examiner's Amendment/Comment
  8. ☒ Examiner's Statement of Reasons for Allowance
  9. ☐ Other
-   
KIMBERLY WILLIAMS  
PRIMARY PATENT EXAMINER

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. Claims 1-20 are allowed.
2. The following is an examiner's statement of reasons for allowance: claims 1 and 10 (the structural elements of system claim 10 perform all of the steps of method claim 1) are allowed over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of said prior art which teaches an image processing system for processing a digital multi-colour image, or a method for image processing a digital multi-colour image claimed in the following:

generating from said digital multi-colour image, image signals for a selection of process colours, each image signal being associated with a digital separation image of a process colour of said selection of process colours and specifying for each pixel of said digital multi-colour image an image density value for the associated process colour; and

adding up, for each image part of said digital multi-colour image, the image density values of all said process colours of the pixels of the image part in order to determine for each said image part a total area coverage value (CT),

wherein, if the total area coverage value of an image part exceeds 100%, the method further comprises the following steps:

- a) dividing image density values of pixels of the image part specified by the image signals, into first image density values associated with a first layer of image dots of marking particles and at least second image density values associated with a second and any

Art Unit: 2625

following layer of image dots of marking particles such that the sum of said at least second image density values corresponds to an area coverage value equal to CT-IO0%, and

b) converting the image signals by using a matrix-dither technique into corresponding first printing signals and at least corresponding second printing signals, each printing signal indicating for each pixel of the image part whether an image dot of marking particles of the corresponding process colour is to be formed, said matrix-dither technique being such that each of the first printing signals is built up from a raster of a first two-dimensional matrix structure by thresholding said first image density values, while each of the second printing signals is built up from a raster of a second two-dimensional matrix structure different from said first two-dimensional matrix structure, by thresholding said second image density values.

3. Ng et al. (5,107,349) disclose a method and system for providing a halftone threshold value supermatrix which produces different screen frequencies between density steps, but at the same screen angle. Ng et al. fail to specifically address the invention as claimed.

4. Yao et al. (6,250,733) disclose a method of operating a printing system that can print any of several different colors onto a point on a sheet of printer media. Yao et al. fail to specifically address the invention as claimed.

5. Sawano et al. (US 2002/0057442 A1) disclose to provide an image printing method capable of preventing chromatic misregistration even when dither patterns are utilized. Sawano et al. fail to specifically address the invention as claimed.

Art Unit: 2625

6. Bouchard et al. (6,906,736) disclose a method for enhancing color uniformly of images produced by way of a printer having multiple thermal print heads. Bouchard et al. fail to specifically address the invention as claimed.

7. Claim 16 is allowed over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of said prior art which teaches a computer program product embodied on at least one computer-readable medium claimed in the following:

generating from said digital multi-colour image, image signals for a selection of process colours, each image signal being associated with a digital separation image of a process colour of said selection of process colours and specifying for each pixel of said digital multi-colour image an image density value for the associated process colour; and

adding up, for each image part of said digital multi-colour image, the image density values of all said process colours of the pixels of the image part in order to determine for each said image part a total area coverage value (CT),

wherein, if the total area coverage value of an image part exceeds 100%, the product further comprising computer-executable instructions for:

(a) dividing image density values of pixels of the image part specified by the image signals, into first image density values associated with a first layer of image dots of marking particles and at least second image density values associated with a second and any following layer of image dots of marking particles such that the sum of said at least second image density values corresponds to an area coverage value equal to CT-100%, and

(b) converting the image signals by using a matrix-dither technique into corresponding first printing signals and at least corresponding second printing signals, each printing signal indicating for each pixel of the image part whether an image dot of marking particles of the corresponding process colour is to be formed, said matrix-dither technique being such that each of the first printing signals is built up from a raster of a first two-dimensional matrix structure by thresholding said first image density values, while each of the second printing signals is built up from a raster of a second two-dimensional matrix structure different from said first two-dimensional matrix structure, by thresholding said second image density values.

8. Ng et al. (5,107,349) disclose a method and system for providing a halftone threshold value supermatrix which produces different screen frequencies between density steps, but at the same screen angle. Ng et al. fail to specifically address the invention as claimed.

9. Yao et al. (6,250,733) disclose a method of operating a printing system that can print any of several different colors onto a point on a sheet of printer media. Yao et al. fail to specifically address the invention as claimed.

10. Sawano et al. (US 2002/0057442 A1) disclose to provide an image printing method capable of preventing chromatic misregistration even when dither patterns are utilized. Sawano et al. fail to specifically address the invention as claimed.

11. Bouchard et al. (6,906,736) disclose a method for enhancing color uniformly of images produced by way of a printer having multiple thermal print heads. Bouchard et al. fail to specifically address the invention as claimed.

*Conclusion*

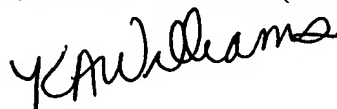
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Milbrandt (4,631,548); Yoshino et al. (5,955,185); Mo (6,084,689); Parisi et al. (US 2002/0113968 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlotte M. Baker whose telephone number is 571-272-7459. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
CMB

  
KIMBERLY WILLIAMS  
PRIMARY PATENT EXAMINER